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EPA Superfund
Explanation of Significant Differences:

POWELL ROAD LANDFILL
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EXPLANATION OF SIGNIFICANT DIFFERENCES

POWELL ROAD LANDFILL
HUBER HEIGHTS, OHIO

I. Introduction

Powell Road Landfill site (the "Site") is located in Huber Heights, Ohio, a suburb in the northern Dayton metropolitan area of Montgomery County, Ohio. The site is located at 4060 Powell Road, Huber Heights, Ohio and encompasses approximately 70 acres. It is bordered to the north by Powell Road and residential housing, to the east by an intermittent stream, to the west by wooded areas and to the south by wooded areas and the Great Miami river. The actual area for waste disposal covers approximately 36 acres, rising 30 to 40 feet above the surrounding terrain. The nearest residents are about 200 feet north of the landfill on Powell road. A residential area known as Eldorado Plat is immediately south of the Great Miami River to the south of the landfill. The site is located on till, lacustrine deposits, bedrock and the outwash deposits that constitute the Great Miami River buried valley aquifer, which is a designated sole-source aquifer under U.S. EPA's Safe Drinking Water Act.

The U.S. Environmental Protection Agency ("U.S. EPA") and the Ohio Environmental Protection Agency ("Ohio EPA") are the lead and support agencies, respectively, for conducting the remedial action at the Site under the authority of the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") of 1980, as amended by the 1986 Superfund Amendments and Reauthorization Act ("SARA"), 42 U.S.C. Section 9601, et seq. U.S. EPA issued a Record of Decision ("ROD") on September 30, 1993, which outlined the remedy selection process and the selected clean-up action for the Site. The selected remedial action addresses the sources of the contamination by containment of the landfill and contaminated soils and treatment of leachate and ground water. The major components of the selected remedial action are:

- institutional controls
- improved landfill cap with liner
- excavation of contaminated soils]
- consolidation of contaminated soils under landfill cap
- ground water monitoring
- flood protection
- storm water controls
- active landfill gas collection with flare
- leachate extraction
- on-site leachate treatment
- extraction of ground water from the shallow aquifer adjacent to the landfill
- on-site ground water treatment
- discharge of treated ground water and leachate to river.

Ohio EPA concurred with the selected remedy in the ROD.

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In January of 1997, U.S. EPA completed an Explanation of Significant Difference ("ESD") for

the ground water component of this site (referred to as the ground water ESD). As a result of ground water quality data gathered throughout the remedial investigation and during the pre-design field investigations, the potentially responsible parties ("PRPs") proposed discontinuing the ground water extraction and treatment portions of the remedial design and remedial action. Upon careful review of the supporting documentation on which the proposal was based, U.S. EPA and Ohio EPA (the Agencies) determined that discontinuing these portions of the selected remedy was not appropriate at that time. The Agencies, however, determined that allowing the ground water portions of the remedy to be designed and implemented after the remaining remedial components are in place (phasing) is protective of human health and the environment. U.S. EPA determined that this was an appropriate change to the remedy selected in the ROD and, accordingly, issued the ground water ESD. Under the ground water ESD, the PRPs will further evaluate ground water quality and contaminant transport. Based on these data, a determination will be made whether the PRPs will be required to design, build and operate the ground water extraction and treatment system, whether the ROD will be amended to eliminate the ground water component or if continued monitoring is necessary to evaluate the ground water component.

II. Summary of Significant Differences from the ROD Remedy

Pursuant to Section 117(c) of CERCLA, 42 U.S.C. º9617(c), U.S. EPA offers herein an explanation of the significant differences ("ESD") from the ROD remedy that will now be incorporated into the final remedial action.

During the Remedial Design, the PRPs further investigated the possibility of discharging leachate1 to the municipal Publicly Owned Treatment Works (POTW) for treatment, rather than constructing and operating an on-site leachate treatment facility. Because the Record of Decision (ROD) is prescriptive with regard to on-site treatment, the intent of this Explanation of Significant Difference (ESD) is to allow for: 1) direct discharge to the sewer without pre-treatment, or 2) construction and operation of a pre-treatment plant and discharge to the sewer, or 3) construction and operation of an fully functional on-site treatment plant and discharge to surface water. This ESD will be identified as the leachate ESD. This decision is contingent on the PRPs obtaining all the necessary permits and approvals and meeting all long-term monitoring requirements for treatment of extracted leachate.

Section 117(c) of CERCLA, as amended by SARA, states that:

> [a]fter adoption of a final remedial action plan-

1For purposes of this ESD and to meet the ROD requirements for leachate removal, the term "leachate" may also include groundwater collected beneath the buried waste (i.e., ROD (p. 17) requires a slight inward groundwater gradient from leachate removal).

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> (1) if any remedial action is taken,
> (2) if any enforcement action under section 106 is taken, or
> (3) if any settlement or consent decree under section 106 or section 122 is entered into, and if such action, settlement, or decree differs in any significant respects from the final plan, the President or the State shall publish an explanation of the significant differences and the reasons such changes were made.

Under the National Contingency Plan ("NCP"), promulgated pursuant to Section 105 of CERCLA, and U.S. EPA guidance, a significant difference is an incremental change to a

component of the remedy that does not fundamentally alter the overall remedial approach. A fundamental change, on the other hand, is one that actually changes the basic feature or overall approach of the remedy to be implemented at a site, (e.g., if a remedy was changed from a containment remedy to incineration) and requires a 30-day public comment period.

This Explanation of Significant Differences is necessary to document that U.S. EPA and Ohio EPA have decided to modify the remedy selected in the September 1993 ROD. The Agencies believe that the overall protectiveness of human health and the environment provided by the selected remedy will not be compromised by this modification.

This document shall become part of the permanent administrative record file for the Site, which is available for viewing at the Dayton & Montgomery County Public Library, Huber Heights Branch, 636 Brandt Pike, Huber Heights, Ohio, and at U.S. EPA regional offices in Chicago, Illinois, during normal business hours. The site file is also available for public viewing at Ohio EPA's southwest district office in Dayton, Ohio.

III. Summary of Site History Enforcement Activities Site Contamination and Selected Remedy

A. Site History

The Site is a former gravel pit which was converted to a landfill in 1959 and operated until 1984 under several different owners. The current owner is SCA Services of Ohio, a subsidiary of Waste Management of North America, Inc. Commercial, industrial, and non-hazardous domestic waste were disposed of in the landfill. Degradation of these wastes resulted in a release of hazardous substances. It is also believed that improper disposal of certain types of industrial waste have occurred a the landfill, including ink waste, paint sludge, strontium chromate and benzidine. The landfill ceased operation in 1984 and was capped and seeded in 1985.

The Site was proposed for listing on the National Priorities List ("NPL") on September 8, 1983, and was final on the NPL on September 21, 1984.

In December, 1984, after identifying contamination in the ground water in the area of the Site, the Ohio EPA requested U.S. EPA's support to determine if an imminent and substantial endangerment to human health or the environment existed. U.S. EPA's Technical Assistance Team ("TAT") sampled 46 private residential wells. Sampling results identified low levels of VOCs in 6 residential wells. After reviewing these sampling results, U.S. EPA determined that an imminent and substantial risk to human health and the environment was not present at that time, and emergency actions were not required. However, the U.S. EPA recommended that several activities be conducted in the area, which included conducting a detailed Remedial Investigation of the Powell Road Landfill.

B. Enforcement Activities

In April, 1986, negotiations began for a 106 Administrative Order on Consent ("AOC") under which the PRPs would perform the Remedial Investigation/Feasibility Study ("RI/FS") at the Site. These negotiations terminated in May, 1986, and U.S. EPA began performance of the RI/FS at the Site.

During June of 1987, one PRP, SCA Services of Ohio, Incorporated, contacted U.S. EPA and expressed interest in taking over performance of the RI/FS. On November 12, 1987, an AOC was entered into between the U.S. EPA, the Ohio EPA, the Ohio EPA, and SCA Services of Ohio, Incorporated ("SCA") (currently a subsidiary of Waste Management of North America, Inc).

This AOC requires SCA to conduct a RI/FS and to pay all past costs and future RI/FS oversight costs associated with the Site. The final Remedial Investigation ("RI") report was approved in March of 1992 and the Feasibility Study ("FS") was approved in March of 1993.

Initial PRP search activities at this Site identified seven (7) PRPs. General Notices of Potential Liability and CERCLA Section 104(e) Information Requests were issued to all seven (7) PRPs on December 2, 1985. Since 1985, U.S. EPA has issued hundreds of Information Requests and follow-up Information Requests. General Notice letters were sent to thirty-seven (37) PRPs in May, 1993.

U.S. EPA and Ohio EPA entered negotiations with an expanded PRP group to perform the Remedial Design ("RD") work as detailed in the ROD. In June, 1994, an order became effective for the Site under which four PRPs committed to design all phases of the cleanup. The PRP group has been satisfactorily conducting the remedial design. Special Notice letters inviting participation in Remedial Action negotiations have been issued to appropriate PRPs by U.S. EPA. Additional future Information Requests and follow-up Information Requests will be used as appropriate.

A draft DeMinimis Agreement was sent to 196 generators and transporters in May, 1997 for potential settlement. Negotiations were ongoing at the time of this ESD.

Special Notice letters were issued to twelve (12) PRPs in May, 1997. The Special Notice letters included a Consent Decree and a contingent Ground Water Scope of Work (Ground Water SOW). The Ground Water SOW will be implemented if the ground water extraction and treatment system is required (as contemplated in the January, 1997 Groundwater ESD). A second contingent SOW was developed for the design, construction and operation of an on-site leachate treatment plant (Leachate-SOW). The Leachate-SOW will be implemented if an on-site treatment system is required for treatment of leachate (as contemplated in this Leachate ESD) Negotiations for the Consent Decree and the SOWs were ongoing during development of this ESD.

C. Site Contamination

The RI determined the nature and extent of on-site contamination, and estimated the risks posed by the Site to human health and the environment. The RI Report finalized in February, 1992 identified the following contamination:

On-Site (contamination associated with the Site)

- Landfill gases consisting of methane with detectable concentrations of volatile organic compounds (VOCs).

- Leachate (landfill liquids) consisting of VOCs, semivolatile organic compounds and inorganic compounds.

- Surface and near-surface soils containing semivolatile organics, pesticides and polychlorinated biphenyls (PCBs).

- Shallow and primary aquifers adjacent to the landfill containing VOCs.

- Primary aquifer south of the river (Eldorado Plat area) containing VOCs

Off-Site (contamination not associated with the Site)

- Primary aquifer south of the river (Needmore Road area) containing VOCs. A connection between the Site and contamination found in this area could not be confirmed and is therefore not addressed by the final remedial actions.

Additional sampling of soils, leachate and groundwater was conducted during the pre-design field investigation. The water-quality data from 1983 through 1995 indicates that ground water quality has improved or remained consistent (has not degraded) since 1988. In addition, the contaminant concentrations in the ground water in the vicinity of PRL are at very low levels.

D. Description of the Selected Remedy as Set Forth in the ROD

The remedial action will be a final site-wide remedy. The selected remedial action addresses the sources of the contamination by containment of the landfill and contaminated soils and treatment of leachate and ground water. The major components of the selected remedial action for the Powell Road Landfill are:

- Institutional controls, including site security, deed restrictions and access controls.
- Flood protection, including but not limited to seeding and mulching unvegetated areas, maintaining temporary control measures, and protecting existing vegetation.
- Storm water controls including berms, discharge ditches, etc. to dissipate the energy of the storm water flow and reduce erosion potential.
- Excavation of contaminated soils and consolidation of soils under the improved landfill cap.
- An improved landfill cap consisting of a low permeability layer, a drainage layer, a geotextile layer, and a vegetative soil layer.
- A leachate extraction and collection system consisting of a series of vertical extraction wells installed in the landfilled waste designed to extract leachate in order to prevent its migration out of the landfilled waste.
- A ground water extraction system to capture contaminated ground water from the shallow aquifer adjacent to the landfill and on-site treatment (the ground water component is contingent per the January, 1997 ESD).
- On-site treatment system to treat extracted leachate (off-site treatment is proposed in this ESD).
- Active landfill gas collection and treatment with a flare.
- Discharge of treated ground water and leachate to river in accordance with NPDES requirements (as necessary pursuant to the January, 1997 and this ESD).
- Monitoring systems for ground water, air, points of compliance, and the extraction/treatment/discharge systems, in order to determine the effectiveness of the remedial actions.

The selected remedial action will address the principal threats posed by the Site. The ROD contains a number of remedial components which are unaffected by this ESD and are not discussed in this ESD.

IV. Summary of Significant Differences

The ROD remedy, as described above, is mainly a containment remedy which relies on a physical component (cap) as the primary barrier to contaminant movement. The leachate extraction system serves to augment the reduction in contaminant movement by removing liquids which will minimize vertical migration of contaminants to ground water and minimize lateral ground water migration by creating a slight inward by hydraulic gradient in ground water beneath the waste. The changes to the ROD described herein continue to provide for a

containment remedy. This ESD proposes to allow for the flexibility for either discharge of extracted leachate directly to the Publicly Owned Treatment Works (POTW), design and construction of an on-site pre-treatment system and discharge to the POTW, or design and construction of a full on-site treatment system and discharge to surface water under the requirements of the National Pollution Discharge Elimination System (NPDES).

As a result of discussions involving the U.S. EPA, Ohio EPA, the PRPs and information contained in the administrative record, the following significant changes are being proposed:

1) Defer the design of an on-site treatment system to allow the PRPs to investigate/evaluate the option of discharging directly to the POTW.

* If the PRPs obtain the necessary and appropriate permits and approvals for direct discharge of extracted leachate to the POTW, the requirement for design and operation of an on-site treatment plant will be eliminated.

* If the PRPs are allowed to discharge extracted leachate to the POTW, but are required to pre-treat the leachate, then the PRPs shall submit a design work plan for on-site pre-treatment to U.S. EPA and Ohio EPA within thirty (30) days of a Notice to Design form U.S. EPA or sixty (60) days after notification by the POTW of permission to discharge pre-treated leachate, whichever is sooner.

* If the PRPs are not allowed to discharge extracted leachate to the POTW, the PRPs shall submit a design work plan for full on-site treatment to U.S. EPA and Ohio EPA within thirty (30) days of a Notice of Design by U.S. EPA or sixty (60) days after such notification by the POTW, whichever is sooner.

* In no way will the evaluation and permitting for the discharge/off-site treatment be allowed to delay the collection and treatment of leachate. If the PRPs are unable to obtain written permission or a letter of intent to allow discharge from the POTW within 30 days after completed construction of the leachate extraction system, design for the on-site construction of the treatment plant will be triggered and discharge to surface water under NPDES will be mandatory. However, if the PRPs are unable to obtain written permission of a letter of intent to allow discharge through no fault of their own, U.S. EPA in consultation with Ohio EPA and the POTW may use its discretion to suspend this trigger.

V. Explanation of Significant Differences

U.S. EPA and Ohio EPA have determined that a significant change will be made to the Site remedial action plan. The significant change to the remedy is:

(1) A postponement of the design and implementation of the on-site leachate treatment system until it is determined if extracted leachate can be: 1) directly discharged to the sewer, or 2) discharged to the sewer subject to pre-treatment, or 3) on-site treatment and discharge to surface water under the appropriate NPDES requirements. This delay will terminate 30 days after completed construction of the leachate collection system. If it is determined that discharge can occur to the POTW, the requirement for the PRPs to design, build and operate and on-site leachate treatment plant will be removed.

The documentation required to illustrate that discharge to the POTW is approved (either with or without treatment) shall be, in order of preference, 1) an approved permit from the POTW, or 2) a letter certifying intent of the POTW to allow discharge to the sewer. This letter shall be

from the POTW and shall clearly outline any specific terms and conditions for discharge.

The Agencies have determined that a change in the location of the treatment from on-site to off-site is not considered to be a fundamental change and that no public comment period is warranted.

Assuming a permit for discharge to the POTW can be obtained and the sewer can be accessed on-site, this ESD may result in significant remedy savings and be equally as protective as the remedy described in the ROD. Specifically, off-site treatment can reduce costs by eliminating the construction capital costs for the treatment system, projected at $944,0000, and result in an estimated 25% reduction in Operation & Maintenance costs, or $613,500 in savings. In total, this ESD may result in cost savings as large as $1,557,500 over the life of the project.

VI. Support Agency Comments

The Ohio EPA is in agreement with the modifications and approach# made by the U.S. EPA to the September 1993 Powell Road Landfill ROD, as expressed in this ESD.

VII. Affirmation of Statutory Determination

U.S. EPA has determined that the selected remedy, with the changes described above, will be protective of human health and the environment, will comply with federal and State requirements that are applicable or relevant and appropriate to this remedial action, and will be cost-effective. In addition, the revised remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable for this Site. Upon careful scrutiny of the suggested changes and the information submitted to support such changes, U.S. EPA, therefore, has changed the remedy set out in the ROD in the manner described above.

#40 C.F.R. 300.435(c): "Interim Final Guidance on Preparing Superfund Decision Documents," (OSWER Directive 9355.3-02), June 1989, U.S. EPA Office of Emergency and Remedial Response, pp.8-10 to 8-16.

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VIII. Approval/Disapproval

The following signature indicates approval or disapproval of this ESD

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U.S. ENVIRONMENTAL PROTECTION AGENCY
REMEDIAL ACTION

ADMINISTRATIVE RECORD
FOR

POWELL ROAD LANDFILL SITE
HUBER HEIGHTS, MONTGOMERY COUNTY, OHIO

UPDATE #4
EXPLANATION OF SIGNIFICANT DIFFERENCES
JULY 23, 1997

No.	DATE	AUTHOR	RECIPIENT	TITLE/DESCRIPTION	PAGES
1	11/00/96	Rust Environment & Infrastructure	U.S. EPA	Prefinal 95% Remedial Design: Volume 1 (Design Report)	468
2	01/31/97	Linnear, D., U.S. EPA and A. Gibbons, Ohio EPA	Long, R., Waste Management, Inc.	Letter re: U.S. EPA/ OEPA's Comments on the Prefinal 95% Remedial Design Report	14
3	07/16/97	Bellot, M., U.S. EPA	File	Memorandum re: Addition of Draft 95% Remedial Design Report to the Administrative Record	1
4	00/00/00	U.S. EPA		Explanation of Significant Differences for the Powell Road Landfill Site (PENDING)	

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